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The Talk of **Maine**

An Apple a Day

A controversial program has proven it's worth.

Jeff Clark

Don't ask Anne Blanchard at Presque Isle Middle School to give up her school's laptop computers. Or Ted Hall at Yarmouth High School. Or just about anyone else familiar with the once-controversial and now widely admired state project that puts Apple iBooks in the hands of every seventh- and eighth-grade student in Maine. In fact, it's difficult these days to find anyone who knows about the state's laptop initiative who is willing to criticize it.

When the program came up for renewal last year, the \$41-million, four-year proposal sailed through the legislature with little debate and no opposition worth mentioning. Not a single middle school in the state has opted to drop out of the program, which will include about 37,000 students when classes start this month. Schools also retained most of the 32,000 laptops from the original program for use in other grades. In fact, at least a third of the state's school districts have expanded laptop usage to lower or upper grades, including some fourteen high schools, at their own expense.

Maine is serving as the biggest test bed in the world for the idea that computers can help students learn better and equip them better for life in the twenty-first century. And after five years an increasing amount of research is showing that the machines are doing just that. The Maine experience is also demonstrating why the program has worked here and hasn't worked in several other highly publicized attempts outside the state.

"This is a program that's very much embedded in Maine's middle

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schools now," observes Bette Manchester, who has overseen the laptop project in the Maine Department of Education since its inception. "In the first four years, a lot of teachers and principals worried that this wouldn't be permanent, that the legislature wouldn't continue funding. So they questioned if they should really make the effort to move to a laptop-centered curriculum if it wasn't going to stick around. After the second round of funding, every school in the state decided to stay in. No school district has ever told me it would voluntarily go back."

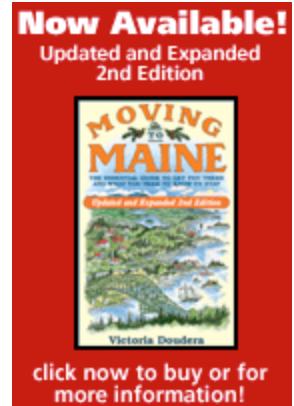
Some districts have already expanded laptop use into other grades, but this year for the first time the state is providing laptops to every high school teacher in Maine. "Our original plan was to move into the high schools eventually," Manchester explains. "We know now that what works best is getting the teachers comfortable with the tools before they start using them in the classroom."

The key role of teachers is one of the major conclusions that studies and observers have drawn in the past five years. "If you don't have the teachers on board, willing and able to jump in and try stuff and use it right away, you're asking for trouble," offers Ted Hall, principal at Yarmouth High School. Yarmouth has expanded the laptop program into its high school one year at a time since 2004, and this fall the entire student body from seventh to twelfth grades will have computers. "When the laptop program was introduced, this district made the commitment to give every teacher in every school a laptop," Hall notes. "So when the choice was made to expand student laptops into the high school, the teachers were already familiar with them."

"When you have established a curriculum and a method of instruction, there's this dramatic change in the way your teachers teach and your students learn," says Blanchard, principal of Presque Isle Middle School. "And there's more ahead. Even with all we've done so far, I think we're still in our infancy with laptops. The potential is enormous."

The key, says Blanchard and many others associated with the program, is educating teachers about how to use computers in the classroom. "It's less student training and more teacher training," she explains. "Students hit the ground running. With teachers, it's been a complete shift in the way they present information."

"In places where teachers haven't participated in professional development and training, we see almost no change in the way information is presented," Manchester adds. "It's like a 1950s classroom with a fancy typewriter. For this to work, it has to become part of the teaching process, not something over there on the side."



"We were fortunate that we always viewed this as an educational project, not a technological project," observes former Governor Angus King, who weathered an avalanche of criticism to push the program through the legislature in 2001 and to implement it in 2002 during his second term. He credits Bette Manchester, among others, with realizing the importance of teacher training very early in the process and landing a million-dollar grant from the Bill & Melinda Gates Foundation for teacher development in the first year. Credit-card company MBNA and its successor Bank of America have continued the support in the years since for follow-up training.

"I'm afraid a lot of places [outside Maine] look at laptops as a hardware project," King continues. "They think, 'Well, we're gonna get laptops and throw them in the classrooms and everything's gonna be great.' And then they're surprised when it doesn't work that way. We made some right decisions at the time that were more right than we thought they would be."

King notes the oft-cited case of the Liverpool, New York, school system, which ended its laptop program last spring after seven years amid complaints by teachers and principals that the machines "got in the way" of teaching, according to published reports. "The big thing for me to learn as a political leader is that implementation is as important as vision," he says. "In New York, the implementation was lacking. It was like handing out violins to people on the street and then being disappointed when they can't make music. Laptops teach kids to sing, but only if their teachers know the music."

The initial enthusiasm about laptops generated some unrealistic expectations in some quarters. Even supporters were initially disappointed when the project's potential wasn't reflected immediately in improved scores on standardized tests. But as researchers have looked more closely at the impact, they've discovered that laptops really are fulfilling their promise - just in ways that standardized tests don't measure.

"Outside of writing skills, it's very difficult to see the impact of laptops or any other computer on tests, because standardized tests are static tests," explains David Silvernail, a professor at the University of Southern Maine and director of the Center for Education Policy, Applied Research, and Evaluation who has done much of the current research about laptops. "They measure recall of specific facts, and you don't need a laptop to recall dates in history."

Among other things, laptops teach students how to pull information together from multiple sources to create new information, Silvernail explains. "One of the better outcomes of

laptops that no one is really talking about is that it opens students to interdisciplinary sources," he notes. In other words, a history lesson also becomes a lesson in economics and language and geography using information drawn from dozens of Web sites. One new facet of that process, Silvernail adds, is teaching students the critical analysis skills required to judge the relevance and biases of each source.

Despite the difficulty in measuring the results, Silvernail's research, which is ongoing, has shown differences due to laptop usage. "The one area where you'd expect laptops to have an impact is writing," he notes, "and in fact that's what we found."

Silvernail compared students in classrooms where laptops were used as a working tool to those in classrooms where the computer was essentially a finishing tool, used as a fancy word processor rather than an integral part of the writing process. "Kids using them as instructional tools significantly outscored kids who were not using them that way on the Maine Educational Assessment test," Silvernail concludes. "The powerful thing is that they are becoming better writers, not just turning in better [papers] because they happen to be using a laptop equipped with SpellCheck."

Silvernail is also working with math teachers to help them learn how to use laptops more efficiently. Compared to teachers who don't receive the training, "the differences in math scores are significant," he says. "It really emphasizes the importance of professional development for teachers, and it reinforces the idea that the laptop is a tool and needs to be used wisely."

Perhaps more important than preparing students for the standardized testing of yesterday, Silvernail says, is the laptop's role in preparing students for the tests of tomorrow. Educational Testing Services (ETS), the company that assembles the SAT and GRE tests used by many colleges in their admissions processes, is developing a new twenty-first century skills test for high school seniors and college freshmen that gauges their abilities in critical thinking, information processing, and computer use, among other areas, rather than simply measuring rote learning. Silvernail recently persuaded the company to administer the test to ninth-grade students at Skowhegan High School.

"They outperformed seniors at other schools nationally on the test," he reports. "Those laptops are helping them develop the skills they need for a new century. It's evidence that we're going in the right direction."

Silvernail says there's still much to learn about the impact laptops are having in Maine, and there are few precedents to

guide anyone's expectations. "Almost every time I go to the literature to search for other sources on these topics, I come back empty handed," he says. "We're breaking a lot of new ground here, and a lot of other places are watching what happens in Maine and why it's happening."

Even the most enthusiastic boosters of laptops insist that there is much they still don't know and need to learn. For example, there are anecdotal stories from all over Maine about the enormous impact laptops are having on special education programs, where students with learning disabilities are using the computers to overcome their handicaps in ways no one imagined before. The impacts on disciplinary problems, truancies, and dropout rates also remain largely unmeasured by any standards more accurate than gut instinct and casual conversation.

"We are years ahead of many school systems across the country," notes Manchester, "but we still have an important distance to go." She notes, for example, that the University of Maine System offers only "spotty" resources for preparing prospective teachers to work in laptop-equipped classrooms. "We're working with the college deans to correct that," she notes. "The university system has the same problems we do - education professors didn't grow up using these tools, so they're not trained in how to incorporate the concept into their classes."

Maine is still the target of visits from educational delegations from all over the world - Sweden, New Zealand, Germany, and Australia in the past year - as well as across the country. King and others are now raising money for the Maine International Center for Digital Education, with the plan to continue academic research in what works and where and then spreading the word to the rest of the world. "We have more experience with this than anyone else on the planet," King notes. "It makes sense to get the word out about it."

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